

**UNITED STATES DEPARTMENT OF COMMERCE****United States Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/147,428 12/22/98 SHIOTA

Y 2839-0065-3-

EXAMINER

022850 IM22/0717  
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT  
FOURTH FLOOR  
1755 JEFFERSON DAVIS HIGHWAY  
ARLINGTON VA 22202

GINTINS, I	
ART UNIT	PAPER NUMBER

1724  
DATE MAILED:

19  
07/17/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

# Office Action Summary

Application No.

09/147,428

Applicant(s)

Shiota et al.

Examiner

Ivars C. Cintins

Art Unit

1724



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1) ☒ Responsive to communication(s) filed on Apr 30, 2001

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

4) ☒ Claim(s) 1, 2, 6-10, 13-15, and 19-38 is/are pending in the application.

4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.

6) ☒ Claim(s) 1, 2, 6-10, 13-15, and 19-38 is/are rejected.

7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.

8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some\* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 13

20) ☐ Other:

Art Unit: 1724

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 7, 23, 26, 29 and 31-38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 6 and 23 are indefinite because they recite dimensions for a dimensionless variable (i.e. specific gravity). Claims 7, 26 and 29 depend from claim 6, and are therefore themselves indefinite. Also, the trademarks recited in claims 31-38 are indefinite because the formula or characteristics of a product may change from time to time, and yet it may continue to be sold under the same trademark. See M.P.E.P. § 608.01(v).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Art Unit: 1724

Claims 13, 15 and 30 are again rejected under 35 U.S.C. 102(e) as being clearly anticipated by Gentry (U.S. Patent No. 5,601,797). The alumina balls of the reference (see col. 6, line 15) are patentably indistinguishable from the broadly recited "metallic particles or ceramic particles" of claims 13, 15 and 30.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14 and 19 are again rejected under 35 U.S.C. 103 (a) as being unpatentable over Gentry. As explained above, the reference discloses the claimed invention with the exception of the size of the particles present in the pressure layer. However, the exact size of the alumina balls utilized in the reference system is not seen to materially affect the overall operation of this reference system, or to produce any new and unexpected result; and is therefore deemed to be an obvious matter of choice in design, insufficient to patentably distinguish the claims. Applicant should note that Gentry

Art Unit: 1724

clearly discloses (see col. 6, line 15) that such alumina balls can have "varying diameters".

Claims 1, 2, 8-10 and 28 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Gentry in view of published European Patent Application No. 0 636 399. Gentry discloses the claimed invention with the exception of the recited vertical partition. Published European Patent Application No. 0 636 399 discloses an apparatus comprising a particulate bed, and teaches the use of a vertical partition (see page 2, right column, lines 25-33) in order to minimize surface movements of the particulate material in the bed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the vertical partition of published European Patent Application No. 0 636 399 for the "holddown grid" of Gentry (i.e. element 108), since this secondary reference vertical partition is capable of minimizing surface movement of particulate material in substantially the same manner as the holddown grid of the primary reference, to produce substantially the same results. The exact height (claim 9) and cross-sectional area (claim 8) of this vertical partition are not seen to materially affect the overall operation of the reference device, or to produce any new and unexpected result; and are therefore

Art Unit: 1724

deemed to be obvious matters of choice in design, insufficient to patentably distinguish these claims.

Claims 20 and 27 are again rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/13463 in view of Gentry. WO 96/13463 discloses a wet air oxidation unit comprising a catalytic bed reactor. Accordingly, this reference discloses the claimed invention with the exception of the specific type of catalytic unit employed. Gentry discloses a catalytic unit of the type recited; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the catalytic unit of Gentry for the catalytic unit of WO 96/13463, since this secondary reference catalytic unit is capable of promoting catalytic oxidation of contaminants in a fluid in substantially the same manner as the catalytic unit of the primary reference, to produce substantially the same results.

Claims 21, 22, 24 and 25 are again rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/13463 in view of Gentry as applied above, and further in view of published European Patent Application No. 0 636 399. The modified primary reference discloses the claimed invention with the exception of the recited vertical partition. Published European Patent Application No. 0 636 399 discloses using a vertical partition in a particulate bed in order to minimize surface movements of the

Art Unit: 1724

particles in this bed; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the vertical partition of published European Application No. 0 636 399 for the "holddown grid" of the modified primary reference, since this vertical partition is capable of minimizing surface movement of particulate material in substantially the same manner as the holddown grid of the modified primary reference, to produce substantially the same results.

Claims 6, 7, 23, 26 and 29 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Gentry in view of Beck et al (U.S. Patent No. 4,865,701) or Takagi et al (U.S. Patent No. 5,338,713). The primary reference discloses the claimed invention with the exception of the density of the alumina employed. Each of the secondary references discloses alumina having a density of 4 g/cm<sup>3</sup> (see col. 2, line 38 of Beck et al; and col. 3, lines 12-13 of Takagi et al). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the alumina of either secondary reference for the alumina of the primary reference, since this secondary reference alumina is capable of being formed into balls in substantially the same manner as the alumina of the primary reference, to produce substantially the same results.

Art Unit: 1724

Again, the exact size of the alumina balls utilized in the reference system (claim 7) is not seen to materially affect the overall operation of this reference system, or to produce any new and unexpected result; and is therefore deemed to be an obvious matter of choice in design, insufficient to patentably distinguish this claim.

Claims 31-34, 37 and 38 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Gentry in view of Campbell et al (U.S. Patent No. 5,650,127). The primary reference discloses the claimed invention with the exception of the recited composition of the support material. Campbell et al teaches (see col. 10, lines 11-12) that stainless steel coated with alumina is a known catalyst support material; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ spheres of such a material in the system of Gentry, since this primary reference clearly teaches (see col. 6, line 14) that conventional catalyst support media may be employed in this reference system.

Claims 35 and 36 are rejected under 35 U.S.C. 103 (a) as being unpatentable over WO 96/13463 and Gentry as applied above, and further in view of Campbell et al. The modified primary reference discloses the claimed invention with the exception of the recited composition of the support material. Campbell et al



Art Unit: 1724

teaches that stainless steel coated with alumina is a known catalyst support material; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ spheres of such a material in the system of the modified primary reference, for the reasons given in the paragraph above.

Applicant's arguments filed April 30, 2001 have been noted and carefully considered but are not deemed to be persuasive of patentability. Applicant argues that the rejection of claims 6 and 23 based on Gentry has been overcome by the addition of the limitation that the water-permeable layer contains a substance having a "specific gravity" ranging from "four to 12 g/cm<sup>3</sup>"; and that "the specific gravity of alumina balls is generally known to be about two g/cm<sup>3</sup> or less." It is pointed out, however, that Beck et al (see col. 2, line 38) and Takagi et al (col. 3, lines 12-13) clearly teach that alumina can have a density of 4 g/cm<sup>3</sup>; and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the alumina of either of these references for the alumina of Gentry, for the reasons given above.

Applicant also argues that it would not have been obvious to combine the teachings of Gentry and published European Patent Application No. 0 636 399 in the manner proposed, because the

Art Unit: 1724

European Patent Application does not recite a water-permeable pressure layer. This argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that the European Patent Application is relied upon only for the teaching of using a vertical partition in a particulate bed in order to minimize surface movements of the particulate material in this bed. Since such a function would obviously be desirable in the system of Gentry, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify this primary reference in the manner proposed above.

Similarly, Applicant argues that it would not have been obvious to combine the teachings of Gentry and the International Patent because this International Patent does not disclose a water-permeable pressure layer. Again, this argument has been noted and carefully considered, but is not deemed to be persuasive of patentability. It is pointed out that Gentry clearly teaches the use of such a water-permeable pressure layer, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the catalytic unit of Gentry for the catalytic unit of the International Patent, since this secondary reference catalytic unit is capable of promoting catalytic oxidation of contaminants

Art Unit: 1724

in a fluid in substantially the same manner as the catalytic unit of the primary reference, to produce substantially the same results.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to I. Cintins whose telephone number is (703) 308-3840. The examiner can

Serial Number: 09/147,428

Page 11

Art Unit: 1724

normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

The fax phone numbers for this art unit are: (703) 305-3599 for "Official" faxes after Final Rejection; (703) 305-7718 for all other "Official" faxes; and (703) 305-3602 for "Draft" and other "Unofficial" faxes.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.



**Ivars C. Cintins**  
**Primary Examiner**  
**Art Unit 1724**

I. Cintins  
July 15, 2001